SERVICE MANUAL

AM/FM STEREO TUNER

SANYO

JT 377L

(EUROPE)

SPECIFICATIONS

Note:
The below mentioned specifications are mainly based on the IHF measurements standard. They can therefore not directly be compared with specifications based on the DIN standard or other standards.

FM section	
Frequency range	87.5 – 108 MHz (0.05 MHz steps)
Usable sensitivity	2.0 μV (mono)
Signal to noise ratio (1 mV ANT.)	75 dB (mono)
Harmonic distortion (1 kHz)	0.4% (mono)
Frequency response	30 Hz – 15 kHz (+1/–2 dB)
Stereo separation (1 kHz)	45 dB
Aerial input	75 ohms unbalanced
AM (MW/LW) section	
Frequency range	MW: 531 – 1602 kHz (9 kHz steps) LW : 153 – 281 kHz (1 kHz steps)
Sensitivity	400 μV/m
General	
Power requirements	DC: 12V, 220 mA (from JA 377 or JA 477)
Dimensions (W x D x H)	Approx. 420 x 200 x 61 mm (16-1/2" x 7-7/8" x 2-3/8")
Weight	Approx. 1.6 kg (3 lbs. 9 ozs.)

Specifications subject to change without notice.

Note:
The power switch is mounted on the secondary side and does not disconnected the unit from AC-power, even when switched off.

ADJUSTMENT

GENERAL ADJUSTMENT CONDITION

1. Power source voltage is DC12V.
2. Use a screw driver with plastic grip for all adjustment.
3. Signal input must be kept as low as possible to avoid overload.
4. Use an output meter of the highest possible sensivity.

(1) FM Band

- Set BAND switch in the FM position.

* FM-SG: Standard modulation frequency, 1,000Hz; frequency deviation, ±40kHz dev.

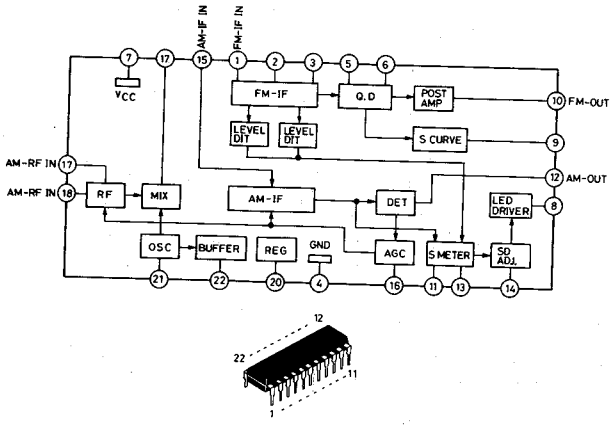
ADJUSTING CIRCUIT		FREQUENCY INDICATED POSITION	INPUT CONDITION			OUTPUT CONDITION		ADJUSTING POINT	ADJUSTING PROCEDURE
			MEASURING INSTRUMENT	FREQUENCY	CONNECT. POINT	MEASURING INSTRUMENT	CONNECT. POINT		
I. F.	V-curve	Lower limit	FM sweep Generator	10.7MHz (nonmodulation)	FM ANT Ⓗ (75Ω) TERMINAL Ⓔ	FM sweep Generator	TP7 Ⓗ TP1 Ⓔ	T201	• Match to the frequency of ceramic filter. • Adjust so that the symmetrical wave from becomes the maximum.
	S-curve	Lower limit	FM sweep Generator	10.7MHz (nonmodulation)	FM ANT Ⓗ (75Ω) TERMINAL Ⓔ	FM sweep Generator	TP6 Ⓗ TP1 Ⓔ	T202	• Match to the frequency of ceramic filter. • Adjust so that the symmetrical wave from becomes the maximum.
Covering frequency	HIGH	108.0MHz (High end)				Digital voltmeter	TP4 Ⓗ TP1 Ⓔ	L104	• Adjust so that the digital voltmeter indication becomes $8.0^{+0.1}_{-0}$ V.
	LOW	87.5MHz (Low end)				Digital voltmeter	TP4 Ⓗ TP1 Ⓔ		• Confirm so that the digital voltmeter indication becomes approx. 1.4~1.5V.
Tracking frequency	LOW	90.0MHz	FM-SG	90.0MHz (10dB)	FM antenna terminal (75Ω)	VTVM Oscilloscope	Output plug	L101 L102	• Adjust so that the output wave form becomes the maximum.
	HIGH	106.0MHz	FM-SG	106.0MHz (10dB)	FM antenna terminal (75Ω)	VTVM Oscilloscope	Output plug	CT101	• Adjust so that the output wave form becomes the maximum.
I. F. (distortion factor)		98.0MHz	FM-SG	98.0MHz 66dB	FM antenna terminal (75Ω)	Digital voltmeter	TP201 Ⓗ TP202 Ⓔ	T202	• Tune exactly, and adjust so that the digital voltmeter indication becomes 0 ± 0.02V.
S. D. (Station Detector)		98.0MHz	FM-SG	98.0MHz 21dB	FM antenna terminal (75Ω)	Digital voltmeter	TP5 Ⓗ TP1 Ⓔ	SVR201	• Tune exactly, and adjust so that the digital voltmeter indication becomes less than 4V.
VCO (19kHz)		98.0MHz	FM-SG	98.0MHz 66dB (nonmodulation)	FM antenna terminal (75Ω)	VTVM Oscilloscope Counter	TP301 Ⓗ TP1 Ⓔ	SVR302	• Turn SVR302 to the position where the STEREO indicator lights up, and stop it there. • Tune exactly, and adjust so that the counter value becomes 19.00 ± 0.03kHz.
Separation (Stereo mode)		98.0MHz	FM-SG STEREO MODULATOR	98.0MHz 66dB	FM antenna terminal (75Ω)	VTVM Oscilloscope	Output plug	SVR301	• Adjust so that the leakage currents of the right and left channels are minimized in good balance.

STEREO MODULATOR: Frequency deviation — Main signal — ±40 kHz dev. Pilot signal — ±6.75 kHz dev.

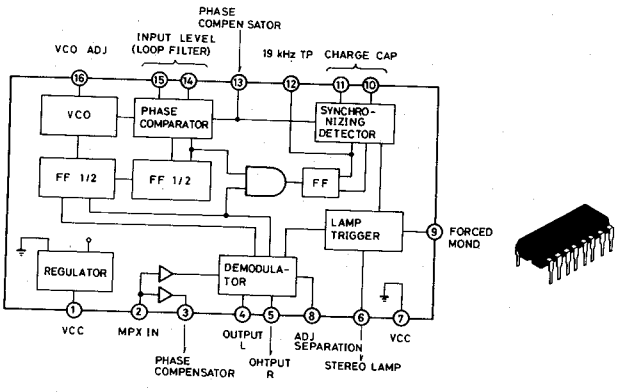
Note: Since TP6 is not a ground voltage, is should not be short-circuited to the case of the meter.

IC BLOCK DIAGRAM

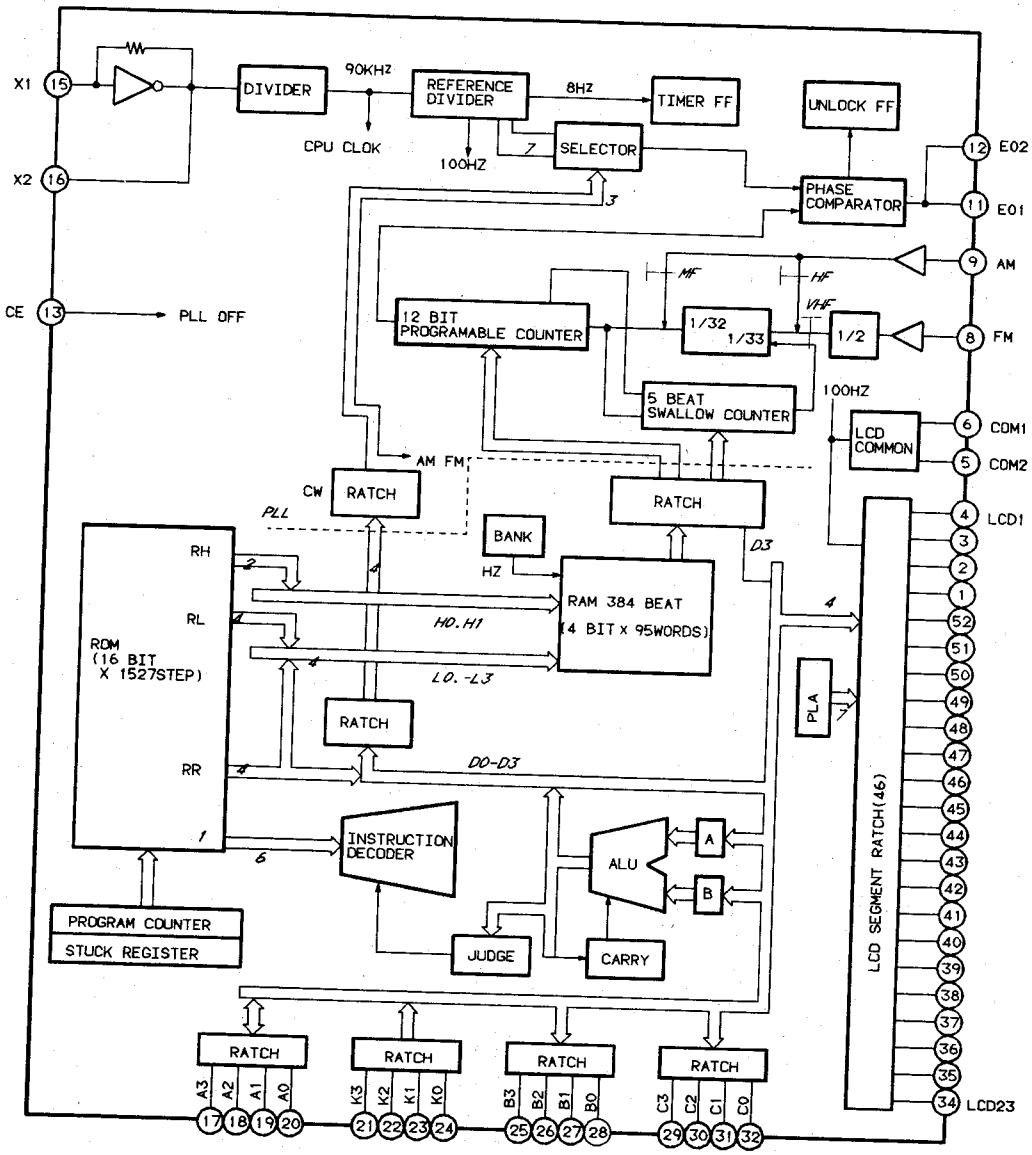
IC201 LA1265 (TUNER SYSTEM)

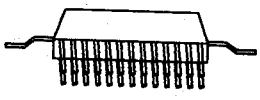


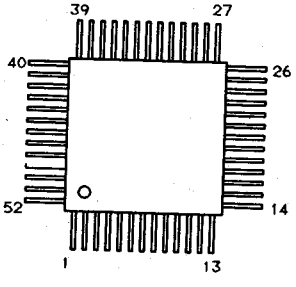
IC301 LA3361 (FM PLL-MPX STEREO DEMODULATOR)



IC401 uPD1708G (DIGITAL TUNING SYSTEM)







(2) MW Band

- Set BAND switch in the MW position.

* AM-SG: Standard modulation frequency, 1,000Hz; percentage 30% modulation.

ADJUSTING CIRCUIT		FREQUENCY INDICATED POSITION	INPUT CONDITION			OUTPUT CONDITION		ADJUSTING POINT	ADJUSTING PROCEDURE
			MEASURING INSTRUMENT	FREQUENCY	CONNECT. POINT	MEASURING INSTRUMENT	CONNECT. POINT		
I.F.		Lower limit	AM sweep Generator	459kHz nonmodulation	AM loop-ant. Terminal Ⓗ Shield case Ⓔ	AM sweep Generator	TP8 Ⓗ TP1 Ⓔ	T203	• Match to the frequency of ceramic filter. • Adjust so that the symmetrical wave form form becomes the maximum.
Covering frequency	LOW	531kHz (Low end)				Digital voltmeter	TP4 Ⓗ TP1 Ⓔ	L152	• Adjust so that the digital voltmeter indication becomes $1.4^{+0.05}_{-0}$ V.
	HIGH	1602kHz (High end)				Digital voltmeter	TP4 Ⓗ TP1 Ⓔ	CT152	• Adjust so that the digital voltmeter indication becomes $8^{+0.05}_{-0}$ V.
Tracking frequency	LOW	603kHz	AM-SG	603kHz 75dB	IRE loop antenna	VTVM Oscilloscope	Output plug	L151	• Adjust so that the output value becomes the maximum.
	HIGH	1404kHz	AM-SG	1404kHz 75dB	IRE loop antenna	VTVM Oscilloscope	Output plug	CT151	• Adjust so that the output value becomes the maximum.
S. D. (Station Detector)		1000kHz	AM-SG	1000kHz 85dB	IRE loop antenna	Digital voltmeter	TP5 Ⓗ TP1 Ⓔ	SVR202	• Tune exactly, and adjust so that the digital voltmeter indication becomes less than 4V.

(3) LW Band

- Set BAND switch in the LW position.

* AM-SG: Standard modulation frequency, 400Hz, 30% modulation.

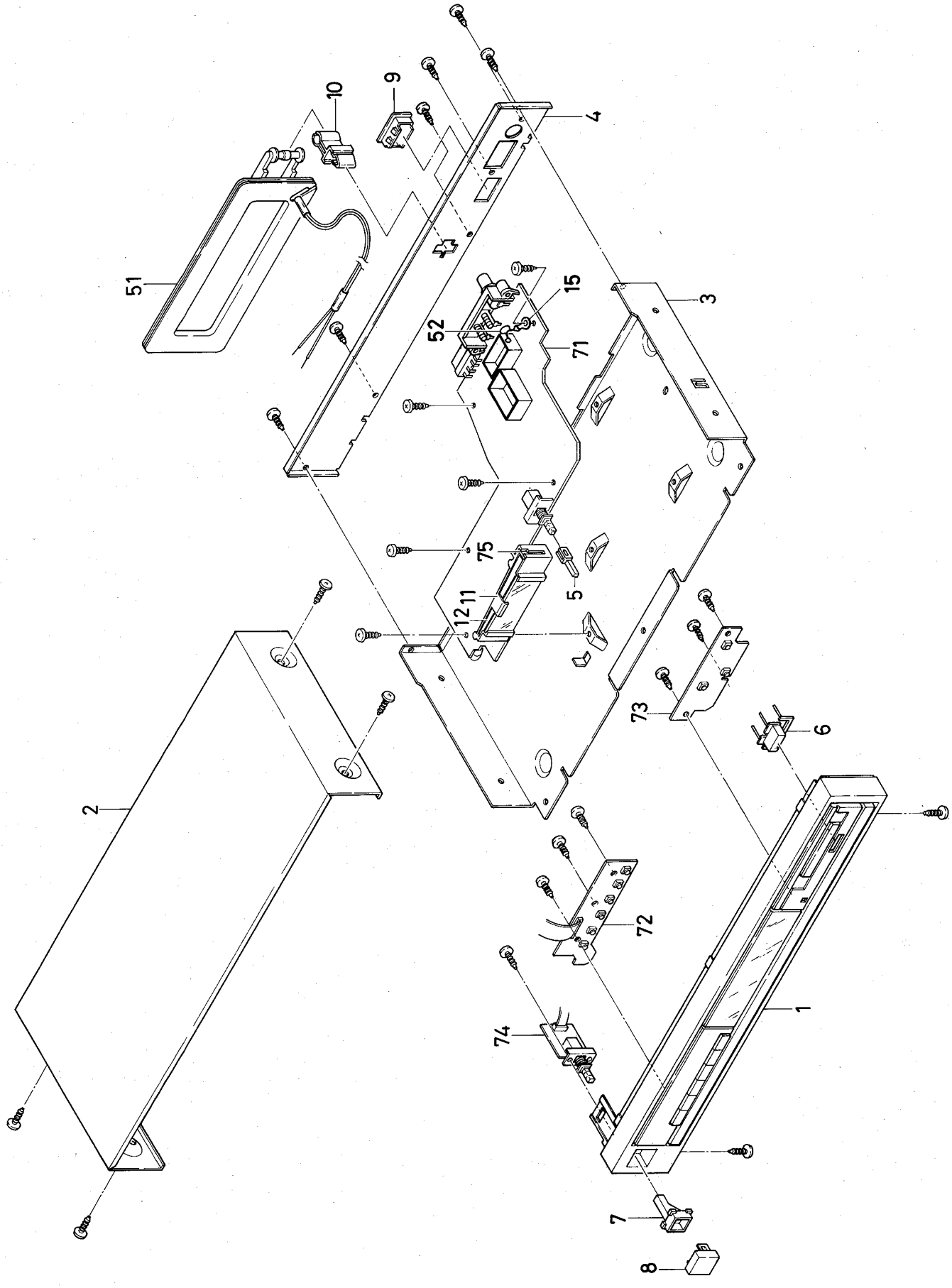
ADJUSTING CIRCUIT		FREQUENCY INDICATED POSITION	INPUT CONDITION			OUTPUT CONDITION		ADJUSTING POINT	ADJUSTING PROCEDURE
			MEASURING INSTRUMENT	FREQUENCY	CONNECT. POINT	MEASURING INSTRUMENT	CONNECT POINT		
Covering frequency	LOW	153 kHz (Low end)				Digital voltmeter	TP101 Ⓗ TP153 Ⓔ	L154	• Adjust so that the digital voltmeter indication becomes $1.6^{+0.05}_{-0}$V.
	HIGH	281 kHz				Digital voltmeter	TP101 Ⓗ TP153 Ⓔ	CT154	• Adjust so that the digital voltmeter indication becomes $6.0^{+0.05}_{-0}$V.
Tracking frequency	LOW	164 kHz	AM-SG	164 kHz	IRE loop antenna	VTVM Oscilloscope	Output plug	L153	• Adjust so that the output value becomes the maximum.
	HIGH	281 kHz	AM-SG	281 kHz	IRE loop antenna	VTVM Oscilloscope	Output plug	CT153	• Adjust so that the output value becomes the maximum.

FUNCTIONS OF EACH PIN (IC401)

Pin No.	Symbol	Name	Function
1 ~ 4 34 ~ 52	LCD1 ~ LCD23	LCD segment signal	These are the segment signal output pins. LCD in use is of 1/2 duty and 1/2 bias operating with the voltage of Vpp, and its frame frequency is 100 Hz.
5 6	COM2 COM1	LCD common signal	These are LCD common output pins.
7 33	V_{DD}	Power supply input	These are the power supply pins for the device. When the device is in operation, the voltage of 5 V ± 10% is applied to these pins: it is also allowed that the voltage is supplied to only one of the two pins 7 and 33 . The rising time of Vpp (from 0 V to 4.5 V) must be 500 ms or less. If the rising time of Vpp is too long or if Vpp does not go down to 0 V and yet rises up to 3.5 V from the non-operating voltage, there may be an inaccurate reading of the state of the diode switch (for the initial setting). In this case, CE pin is used to read the state of the diode switch exactly. When CE pin is set at Low level (to hold the data) during non-clock operation mode, it is possible to lower Vpp down to 2.5 V.
8	VCOH (FM)	FM VCO input	This is the input pin for FM local oscillation. DC is to be cut off with the capacitor to initiate the operation of the built-in AC amplifier.
9	VCOL (AM)	LW/MW VCO input	This is the input pin for LW/MW local oscillation. DC is to be cut off with the capacitor to initiate the operation of the built-in AC amplifier.
10	GND	Ground	This is connected to GND of the unit.
11 12	EO1 EO2	Error output	These are the charge pump output pins for the phase detector which constitutes the PLL. When the frequency resulted from a frequency division of the oscillation frequency is higher than the reference frequency, a High-level signal goes out of these pins. When the former is lower than the latter, a Low-level signal goes out of these pins. And when both frequencies are the same, the floating mode is established. These appears the same signal at these pins at a time, and so it is allowed to connect the signal to any one of the low pass filters for LW/MW and FM.
13	CE	Chip Enable	This is the input pin of the device selection signal. The pin is set at High level to activate the PLL, and it is set at Low level to stop the PLL. When it is at Low level, the display becomes blank. However, if the level setting, either Low or High, does not last 134 μs or more, the operation is ineffective. This pin is to be connected to Vpp during clock operation mode. During non-clock operation mode, this pin needs to be set at Low level to turn off the radio and to be set at High level to turn it on. When the pin is set at Low level during non-clock operation mode, the unit gets in power backup mode to enable low current consumption (10 μA max.).
15 16	XI XO	X'tal	These are the connection pins for the crystal oscillator (4.5 MHz).
17	$\overline{\text{MUTE}}$	Mute Output	This is the muting signal output pin. When it is at Low level, the pop noise is muted which will otherwise be caused when the PLL is out of lock and when the tape and radio are switched over. For other details, refer to "Mute Output Timing Chart."
18	STEREO	Stereo/Mono	This is the output pin of the Stereo/Mono selection signal. With operation of [STEREO] key, this pin becomes High level to enable the Stereo/Mono selection. Also it becomes High level when the power switch is turned on.
19 20	BAND1 BAND2	Band select	These are the output pins of the band selection signal. In the above table, 1 and 0 refer to High level and Low level respectively.
21 ~ 24	K3 ~ K0	Key Return Signal Input	These are the input pins of the key return signal coming from the key matrix. To ensure the reading of Low-level signal, it is needed for each pin to be pulled down with a resistor of about 33 kΩ.
25 ~ 31	KS0 ~ KS6	Key Source	These are the signal source pins for the key matrix scanning.
32	LOCAL	Local/DX	This is the output pin of the Local/Distance selection signal during auto tuning mode. It is usually set at Low level (DX mode).

	BAND1	BAND2
λR1	1	1
FM	1	0
MW	0	0
LW	0	1

EXPLODED VIEW



PARTS LIST

Ref. No.	Part No.	Description
CN403	4-240T-83576	SOCKET 6P
CN901	4-240T-83572	SOCKET 2P
CN903	4-240T-83573	SOCKET 3P
P1	4-236T-21073	PLUG 5P, OUTPUT & + 12V
TP201	4-237T-09000	TERMINAL BOARD 1P
TP202	4-237T-09000	TERMINAL BOARD 1P
TP301	4-237T-09000	TERMINAL BOARD 1P
IC201	SILA1265S++++	IC LA1265S DIP22
IC301	SILA3361+++++	IC LA3361 DIP16
IC401	SIUPD1708G219	IC UPD1708G219 QIP52
Q101	SF2K212+++F++	FET 2SK212 F
Q102	STC2999E++++T	TR 2SC2999 E T
Q103	STC930+E+++C1	TR 2SC930 E CONV SP
Q104	STC2999E++++T	TR 2SC2999 E T
Q105	SF2K212+++F++	FET 2SK212 F
Q151	STD1012G++++T	TR 2SD1012 G T
Q152	STD1012G++++T	TR 2SD1012 G T
Q153	STD1012G++++T	TR 2SD1012 G T
Q154	STD1012G++++T	TR 2SD1012 G T
Q155	STD1012G++++T	TR 2SD1012 G T
Q156	SF2K222+++D++	FET 2SK222 D
Q157	STC536+G+++UB	TR 2SC536 G AUD B SP
Q201	STC930+E+++F1	TR 2SC930 E IF SP
Q202	STC536+G+++UB	TR 2SC536 G AUD B SP
Q203	STC536+G+++UB	TR 2SC536 G AUD B SP
Q204	STC536+G+++UB	TR 2SC536 G AUD B SP
Q301	STC536+G+++UB	TR 2SC536 G AUD B SP
Q302	STC536+G+++UB	TR 2SC536 G AUD B SP
Q303	STD1012G++++T	TR 2SD1012 G T
Q304	STD1012G++++T	TR 2SD1012 G T
Q351	STA608+F++++B	TR 2SA608 F B SP
Q352	STC536+G+++UB	TR 2SC536 G AUD B SP
Q353	STC536+G+++UB	TR 2SC536 G AUD B SP
Q354	STC536+G+++UB	TR 2SC536 G AUD B SP
Q355	STA608+F++++B	TR 2SA608 F B SP
Q356	STA608+F++++B	TR 2SA608 F B SP
Q357	STC536+G+++UB	TR 2SC536 G AUD B SP
Q358	STA608+F++++B	TR 2SA608 F B SP
Q359	STA608+F++++B	TR 2SA608 F B SP
Q401	STC536+G+++UB	TR 2SC536 G AUD B SP
Q402	SF2K222+++D++	FET 2SK222 D
Q403	STC1571F+++++	TR 2SC1571 F
Q404	STA608+F++++B	TR 2SA608 F B SP
Q405	STA608+F++++B	TR 2SA608 F B SP
Q901	STA608+F++++B	TR 2SA608 F B SP
Q902	STA608+F++++B	TR 2SA608 F B SP
D101	SCSVC211B+++1	VARACTOR DIODE SVC211B SP
D102	SCSVC211B+++1	VARACTOR DIODE SVC211B SP
D103	SCSVC211B+++1	VARACTOR DIODE SVC211B SP
D104	SDDS442+X+++T	DIODE DS442 X
D151	SCKV1260B++++	VARACTOR DIODE KV1260B
D301	SDDS442+X+++T	DIODE DS442 X
D302	SDDS442+X+++T	DIODE DS442 X
D303	SDDS442+X+++T	DIODE DS442 X
D304	SDDS442+X+++T	DIODE DS442 X
D351	SDDS442+X+++T	DIODE DS442 X
D352	SDDS442+X+++T	DIODE DS442 X
D353	SDDS442+X+++T	DIODE DS442 X
D401	SDDS442+X+++T	DIODE DS442 X
D403	SDDS442+X+++T	DIODE DS442 X
D404	SDDS442+X+++T	DIODE DS442 X
D405	SDDS442+X+++T	DIODE DS442 X
D406	SDDS442+X+++T	DIODE DS442 X
D407	SDDS442+X+++T	DIODE DS442 X
D408	SDDS442+X+++T	DIODE DS442 X
D409	SDDS442+X+++T	DIODE DS442 X
D901	SDDS442+X+++T	DIODE DS442 X
D902	SDDS442+X+++T	DIODE DS442 X
D903	SDDS442+X+++T	DIODE DS442 X
C101	CC+50010MACHG	CERAMIC 1PF 50V M A CH
C102	CC+50101KAYBG	CERAMIC 100PF 50V K A YB
C103	CC+50102KAYBG	CERAMIC 0.001MF 50V K A YB
C104	CC+50102KAYBG	CERAMIC 0.001MF 50V K A YB

Ref. No.	Part No.	Description
C105	CC+505R6KACHG	CERAMIC 5.6PF 50V K A CH
C106	CC+505R6KACHG	CERAMIC 5.6PF 50V K A CH
C107	CC+501R5MACHG	CERAMIC 1.5PF 50V M A CH
C108	CC+50101KAYBG	CERAMIC 100PF 50V K A YB
C109	CC+50103ZRYFF	CERAMIC 0.01MF 50V Z R YF
C110	CE+50474MRHAF	ELECT 0.47MF 50V M R HA F
C111	CC+50103ZRYFF	CERAMIC 0.01MF 50V Z R YF
C112	CC+50050CDVKS	CERAMIC 5PF 50V C D VK
C113	CC+50100DRCHF	CERAMIC 10PF 50V D R CH
C114	CC+50100DRCHF	CERAMIC 10PF 50V D R CH
C115	CC+50220JRCHF	CERAMIC 22PF 50V J R CH
C116	CC+50103ZRYFF	CERAMIC 0.01MF 50V Z R YF
C117	CB+25103MRXRF	BC CON 0.01MF 25V M R XR
C118	CC+50101KAYBG	CERAMIC 100PF 50V K A YB
C119	CE+16106MRHAF	ELECT 10MF 16V M R HA F
C120	CC+505R6KASL+	CERAMIC 5.6PF 50V K A SL
C121	CC+50101KAYBG	CERAMIC 100PF 50V K A YB
C122	CC+50620JASLG	CERAMIC 62PF 50V J A SL
C123	CC+50560JASLG	CERAMIC 56PF 50V J A SL
C125	CC+50102KAYBG	CERAMIC 0.001MF 50V K A YB
C127	CC+50102KAYBG	CERAMIC 0.001MF 50V K A YB
C152	CN100511JR++F	P P CON 510PF 100V J R
C153	CC+50680JRCHF	CERAMIC 68PF 50V J R CH F
C154	CC+508R2KAUJG	CERAMIC 8.2PF 50V K A UJ
C155	CB+25223MR++F	BC CON 0.022MF 25V M R
C157	CC+50150JACHG	CERAMIC 15PF 50V J A CH
C158	CN100511JR++F	P P CON 510PF 100V J R
C159	CC+50820KRUJF	CERAMIC 82PF 50V K R UJ
C160	CB+25223MR++F	BC CON 0.022MF 25V M R
C161	CC+50470JASLG	CERAMIC 47PF 50V J A SL
C162	CC+50221KAYBG	CERAMIC 220PF 50V K A YB
C163	CB+25223MR++F	BC CON 0.022MF 25V M R
C164	CB+16103MA+YG	BC CON 0.01MF 16V M A Y
C165	CB+25103MRXRF	BC CON 0.01MF 25V M R XR
C201	CC+50103ZRYFF	CERAMIC 0.01MF 50V Z R YF
C202	CC+50103ZRYFF	CERAMIC 0.01MF 50V Z R YF
C203	CC+50103ZRYFF	CERAMIC 0.01MF 50V Z R YF
C204	CC+50223ZRYFF	CERAMIC 0.022MF 50V Z R YF
C205	CC+50223ZRYFF	CERAMIC 0.022MF 50V Z R YF
C206	CC+50223ZRYFF	CERAMIC 0.022MF 50V Z R YF
C207	CE+50105MRHAF	ELECT 1MF 50V M R HA F
C208	CC+50101KAYBG	CERAMIC 100PF 50V K A YB
C209	CE+16107MRHAF	ELECT 100MF 16V M R HA F
C210	CC+50223ZRYFF	CERAMIC 0.022MF 50V Z R YF
C211	CE+50474MRHAF	ELECT 0.47MF 50V M R HA F
C212	CB+25393MR++F	BC CON 0.039MF 25V M R
C213	CB+16103MA+YG	BC CON 0.01MF 16V M A Y
C214	CC+50560JASLG	CERAMIC 56PF 50V J A SL
C215	CE+50474MRHAF	ELECT 0.47MF 50V M R HA F
C216	CE+25475MVHAS	ELECT 4.7MF 25V M V HA S
C217	CE+16106MRHAF	ELECT 10MF 16V M R HA F
C218	CE+50105MRHAF	ELECT 1MF 50V M R HA F
C219	CB+25223MR++F	BC CON 0.022MF 25V M R
C220	CE+16106MRHAF	ELECT 10MF 16V M R HA F
C222	CB+25223MR++F	BC CON 0.022MF 25V M R
C223	CB+25103MAXR+	BC CON 0.01MF 25V M A XR
C224	CC+50102KAYBG	CERAMIC 0.001MF 50V K A YB
C225	CB+25223MR++F	BC CON 0.022MF 25V M R
C226	CC+50471JAYBG	CERAMIC 470PF 50V J A YB
C301	CE+10107MRHAF	ELECT 100MF 10V M R HA F
C302	CE+16106MRHAF	ELECT 10MF 16V M R HA F
C303	CB+25223MR++F	BC CON 0.022MF 25V M R
C304	CB+25103JRXRF	BC CON 0.01MF 25V J R XR
C305	CB+25103JRXRF	BC CON 0.01MF 25V J R XR
C306	CN100102JR++F	P P CON 1000PF 100V J R
C307	CE+50474MRHAF	ELECT 0.47MF 50V M R HA F
C308	CE+50105MRHAF	ELECT 1MF 50V M R HA F
C309	CE+50105MRHAF	ELECT 1MF 50V M R HA F
C310	CE+50105MRHAF	ELECT 1MF 50V M R HA F
C311	CE+50105MRHAF	ELECT 1MF 50V M R HA F
C312	CE+50105MRHAF	ELECT 1MF 50V M R HA F
C313	CB+16222JAXRG	BC CON 0.0022MF 16V J A XR
C314	CB+16222JAXRG	BC CON 0.0022MF 16V J A XR
C315	CC+50391JAYBG	CERAMIC 390PF 50V J A YB

PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

NOTE:

* Materials of Capacitors are abbreviated as follows;

AL ELECT .....Aluminum Electrolytic
BC CON .....Semiconductor Ceramic
CHIP BC .....Chip Semiconductor Ceramic
CHIP TAN.....Chip Tantal
ELECT .....Electrolytic
PP CON .....Polypropylene

* Tolerance of Capacitors are noted with following symboles;

J .....±5%
K.....±10%
M .....±20%
N.....±30%
P .....+100−0%
Q .....+30−10%
Z .....+80−20%

PACKING & ACCESSORIES

Ref. No.	Part No.	Description
	141-6-133T-83400	INNER CORR CASE
	141-6-145T-10500	FOAM PLASTIC CASE
	141-6-235T-35501	INNER POLYE LAMINA COVER, SET
or	141-6-235T-35506	INNER POLEY LAMINA COVER, SET
	141-6-231T-20300	INNER POLYE COVER, ACCESSORY
	141-6-409T-35800	INST MANUAL
	141-6-415T-23500	NOTICE, NORWAY
	141-6-415T-32301	NOTICE, NEW FTZ
	4-245T-00700	ANT, FM

CABINET & CHASSIS

Ref. No.	Part No.	Description
1	141-0-122T-60808	FRONT PANEL ASSY
	BJB2S++3+8+Z1	BIND HD 2 TAPPING SCREW 3X8
2	141-2-111T-67600	CABINET
	BJB2S++3+8+ZK	BIND HD 2 TAPPING SCREW 3X8
3	141-0-125T-39201	BOTTOM LID ASSY
4	141-2-119T-04010	BACK PANEL
	BJB2S++3+8+Z1	BIND HD 2 TAPPING SCREW 3X8 (BOTTOM)
	BJB2S++3+8+Z1	BIND HD 2 TAPPING SCREW 3X8 (ANT)
5	141-2-160T-60830	PUSH BUTTON, MODE/TUN
6	141-2-160T-47903	PUSH BUTTON, BAND
7	141-2-160T-60500	PUSH BUTTON, POWER
8	141-2-156T-37900	CUP KNOB, POWER
9	141-2-210T-70900	BRACKET, CONNECT
10	141-2-210T-70801	BRACKET, ANT
11	141-2-210T-78800	BRACKET, LCD
	BJS2S2R6+8+Z1	FLAT HD 2 TAPPING SCREW 2.6X8
12	141-2-329T-10600	REFLECTOR, LCD
13	141-2-247T-63900	SHEET, REFLECTION
14	141-2-247T-66400	SHEET, DIFFUSION
15	123-2-472R-00401	LUG, EARTH

ELECTRICAL PARTS

Ref. No.	Part No.	Description
51	4-269T-00101	LOOP ANT ASSY, AM
52	CC+50103ZDYFS	CERAMIC 0.01MF 50V Z D YF (C130)

TUNER MAIN PCB ASSY

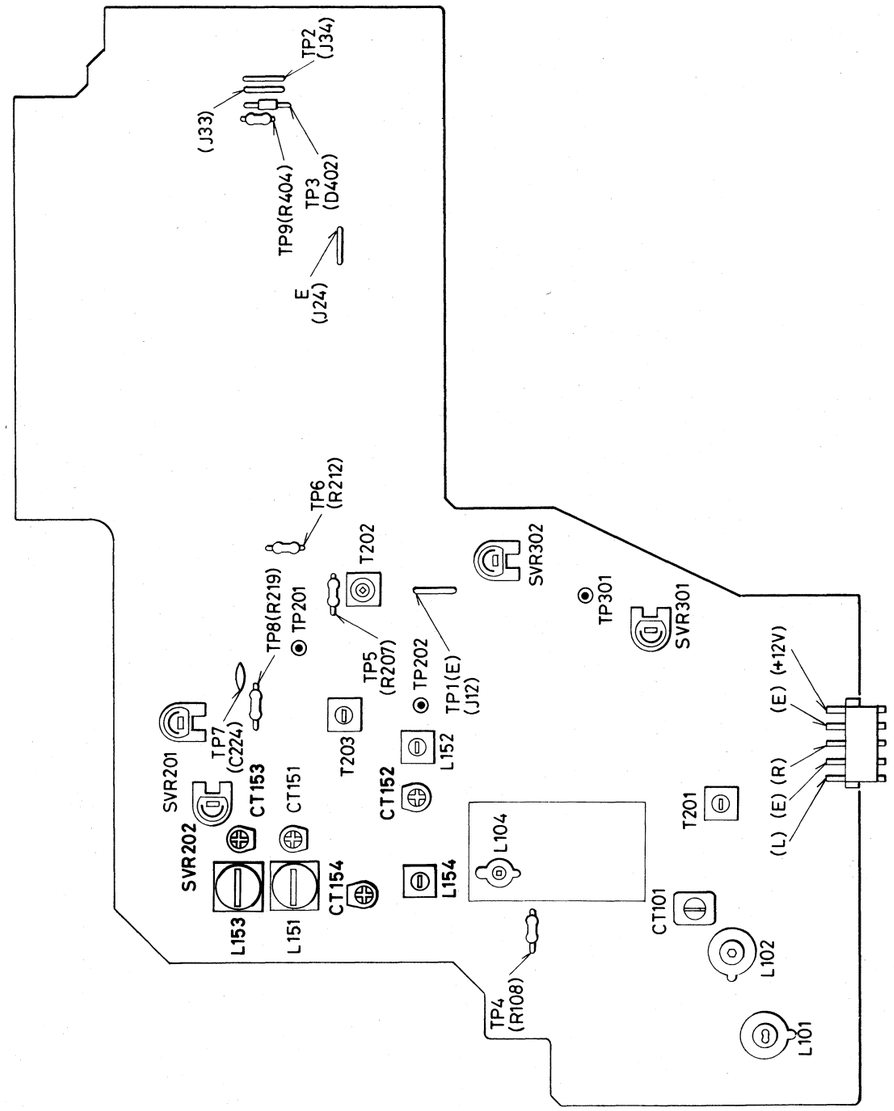
Ref. No.	Part No.	Description
71	141-4-285T-75371	P.C.BOARD ASSY, TUNER MAIN
	BJB2S++3+8+Z1	BIND HD 2 TAPPING SCREW 3X8
	141-2-322T-72101	SHIELD PLATE, FM-RF PARTS SIDE, LED
	141-2-322T-18900	SHIELD PLATE, PARTS SIDE
	141-2-322T-72100	SHIELD PLATE, SOLDER SIDE
	141-2-382T-22700	TERMINAL (JK101), EXT-ANT
	4-970T-21900	LCD (A401)
CT101	4-224R-11600	TRIMMER
CT151	4-224T-15500	TRIMMER
or	4-224T-15571	TRIMMER
CT152	4-224T-15500	TRIMMER
or	4-224T-15571	TRIMMER
CT153	4-224T-15400	TRIMMER
or	4-224T-15471	TRIMMER
CT154	4-224T-15400	TRIMMER
or	4-224T-15471	TRIMMER
T101	4-253T-20040	FILTER
T201	4-256T-35040	IFT
T202	4-256T-39040	IFT
T203	4-256T-26440	IFT
T204	4-255T-06946	MX COIL
T301	4-252T-11300	CHOKE COIL
T302	4-252T-11300	CHOKE COIL
L101	4-265T-56240	VHF COIL
L102	4-265T-56340	VHF COIL
L103	4-253T-15012	FILTER
L104	4-265T-57244	VHF COIL
L105	4-265T-02700	VHF COIL
L151	4-257T-75340	ANT COIL
L152	4-258T-44640	OSC COIL
L153	4-257T-75440	ANT COIL
L154	4-258T-58340	OSC COIL
L155	4-253T-15044	FILTER
X201	4-256T-84500	IF FILTER
X202	4-256T-84500	IF FILTER
X203	4-256T-84500	IF FILTER
X204	4-256T-90100	IF FILTER
X205	4-256T-83700	IF FILTER
X401	4-225T-08800	CRYSTAL
S301	4-238T-39400	SWITCH
SVR201	4-220T-19476	SEMI-FIXED VR, 20K OHM (B)
or	4-222T-97576	SEMI-FIXED VR, 20K OHM (B)
SVR202	4-220T-19476	SEMI-FIXED VR, 20K OHM (B)
or	4-222T-97576	SEMI-FIXED VR, 20K OHM (B)
SVR301	4-220T-19472	SEMI-FIXED VR, 1K OHM (B)
or	4-222T-97572	SEMI-FIXED VR, 1K OHM (B)
SVR302	4-220T-19475	SEMI-FIXED VR, 10K OHM (B)
or	4-222T-97575	SEMI-FIXED VR, 10K OHM (B)
CN401	4-240T-83577	SOCKET 7P

PARTS LIST

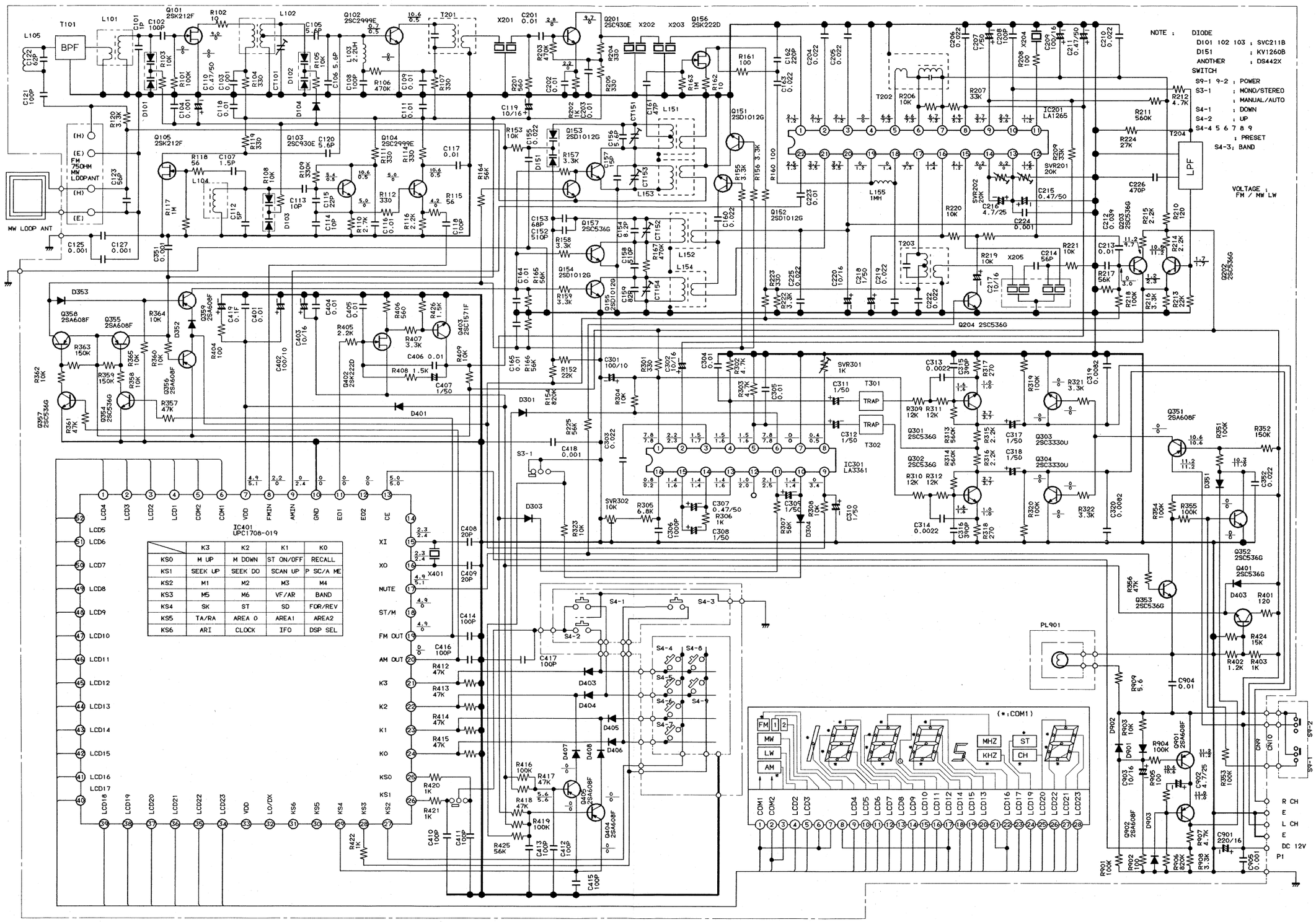
Ref. No.	Part No.	Description
C316	CC+50391JAYBG	CERAMIC 390PF 50V J A YB
C317	CE+50105MRHAF	ELECT 1MF 50V M R HA F
C318	CE+50105MRHAF	ELECT 1MF 50V M R HA F
C319	CB+16822JA+YG	BC CON 0.0082MF 16V J A Y
C320	CB+16822JA+YG	BC CON 0.0082MF 16V J A Y
C351	CC+50102KAYB+	CERAMIC 0.001MF 50V K A YB
C352	CB+16223NA+Y+	BC CON 0.022MF 16V N A Y
C401	CB+16103MA+YG	BC CON 0.01MF 16V M A Y
C402	CE+10107MRHAF	ELECT 100MF 10V M R HA F
C403	CE+16106MRHAF	ELECT 10MF 16V M R HA F
C404	CB+25103MRXRF	BC CON 0.01MF 25V M R XR
C405	CB+16103MA+YG	BC CON 0.01MF 16V M A Y
C406	CB+16103MA+YG	BC CON 0.01MF 16V M A Y
C407	CW+50105RVLRS	NONPOLAR 1MF 50V R V LR
C408	CC+50200JRCHF	CERAMIC 20PF 50V J R CH
C409	CC+50200JRCHF	CERAMIC 20PF 50V J R CH
C410	CC+50101JASL+	CERAMIC 100PF 50V J A SL
C411	CC+50101JASL+	CERAMIC 100PF 50V J A SL
C412	CC+50101KAYBG	CERAMIC 100PF 50V K A YB
C413	CC+50101KAYBG	CERAMIC 100PF 50V K A YB
C414	CC+50101KAYBG	CERAMIC 100PF 50V K A YB
C415	CC+50101KAYBG	CERAMIC 100PF 50V K A YB
C416	CC+50101KAYBG	CERAMIC 100PF 50V K A YB
C417	CC+50101KAYBG	CERAMIC 100PF 50V K A YB
C418	CC+50102KAYB+	CERAMIC 0.001MF 50V K A YB
C419	4-223T-16100	CAPACITOR 0.1F/5.5V
C901	CE+16227MRHAF	ELECT 220MF 16V M R HA F
C902	CE+25475MRHAF	ELECT 4.7MF 25V M R HA F
C903	CE+16106MRHAF	ELECT 10MF 16V M R HA F
C904	CB+16103MA+YG	BC CON 0.01MF 16V M A Y
C905	CC+50102KAYBG	CERAMIC 0.001MF 50V K A YB
R101	401 024 7747	CARBON 100K JA 1/6W
R102	401 024 6443	CARBON 10 JA 1/6W
R103	401 012 7069	CARBON 10K JA 1/4W
R104	401 026 3945	CARBON 330 JA 1/6W
R105	401 012 7069	CARBON 10K JA 1/4W
R106	401 027 0547	CARBON 470K JA 1/6W
R107	401 018 2860	CARBON 330 JA 1/4W
R108	401 012 7069	CARBON 10K JA 1/4W
R109	401 026 4942	CARBON 330K JA 1/6W
R110	401 026 1040	CARBON 2.7K JA 1/6W
R111	401 026 3945	CARBON 330 JA 1/6W
R112	401 026 3945	CARBON 330 JA 1/6W
R114	401 026 3945	CARBON 330 JA 1/6W
R115	401 027 2145	CARBON 56 JA 1/6W
R116	401 025 7845	CARBON 2.2K JA 1/6W
R117	401 024 8041	CARBON 1M JA 1/6W
R118	401 027 2145	CARBON 56 JA 1/6W
R119	401 026 3945	CARBON 330 JA 1/6W
R120	401 018 3877	CARBON 3.3K JA 1/4W
R152	401 025 8248	CARBON 22K JA 1/6W
R153	401 024 7450	CARBON 10K JA 1/6W
R154	401 027 9342	CARBON 820K JA 1/6W
R155	401 018 3877	CARBON 3.3K JA 1/4W
R156	401 026 4348	CARBON 3.3K JA 1/6W
R157	401 018 3877	CARBON 3.3K JA 1/4W
R158	401 026 4348	CARBON 3.3K JA 1/6W
R159	401 026 4348	CARBON 3.3K JA 1/6W
R160	401 024 6740	CARBON 100 JA 1/6W
R161	401 024 6740	CARBON 100 JA 1/6W
R162	401 024 6443	CARBON 10 JA 1/6W
R163	401 024 8041	CARBON 1M JA 1/6W
R164	401 027 3043	CARBON 56K JA 1/6W
R165	401 021 4165	CARBON 56K JA 1/4W
R166	401 027 3043	CARBON 56K JA 1/6W
R167	401 027 0547	CARBON 470K JA 1/6W
R201	401 027 2343	CARBON 560 JA 1/6W
R202	401 024 7044	CARBON 1K JA 1/6W
R203	401 027 0547	CARBON 470K JA 1/6W
R204	401 026 3945	CARBON 330 JA 1/6W
R205	401 026 3945	CARBON 330 JA 1/6W
R206	401 024 7450	CARBON 10K JA 1/6W
R207	401 018 4953	CARBON 33K JA 1/4W

Ref. No.	Part No.	Description
R208	401 024 6740	CARBON 100 JA 1/6W
R209	401 026 4645	CARBON 33K JA 1/6W
R210	RF⁄+4121JSFPR	FP-CARBON S 120 OHM J 1/4W R25
R211	401 027 3241	CARBON 560K JA 1/6W
R212	401 026 9947	CARBON 4.7K JA 1/6W
R213	401 025 8248	CARBON 22K JA 1/6W
R214	401 016 3869	CARBON 2.2K JA 1/4W
R215	401 016 3869	CARBON 2.2K JA 1/4W
R216	401 026 4348	CARBON 3.3K JA 1/6W
R217	401 027 3043	CARBON 56K JA 1/6W
R218	401 024 7747	CARBON 100K JA 1/6W
R219	401 012 7069	CARBON 10K JA 1/4W
R220	401 012 7069	CARBON 10K JA 1/4W
R221	401 024 7450	CARBON 10K JA 1/6W
R222	401 026 4348	CARBON 3.3K JA 1/6W
R223	401 018 2860	CARBON 330 JA 1/4W
R224	401 026 1347	CARBON 27K JA 1/6W
R225	401 027 3043	CARBON 56K JA 1/6W
R301	401 018 2860	CARBON 330 JA 1/4W
R302	401 020 2073	CARBON 4.7K JA 1/4W
R303	401 020 2073	CARBON 4.7K JA 1/4W
R304	401 024 7450	CARBON 10K JA 1/6W
R305	401 022 3167	CARBON 6.8K JA 1/4W
R306	401 012 5768	CARBON 1K JA 1/4W
R307	401 027 3043	CARBON 56K JA 1/6W
R308	401 012 7069	CARBON 10K JA 1/4W
R309	401 024 9741	CARBON 12K JA 1/6W
R310	401 024 9741	CARBON 12K JA 1/6W
R311	401 024 9741	CARBON 12K JA 1/6W
R312	401 024 9741	CARBON 12K JA 1/6W
R313	401 027 3241	CARBON 560K JA 1/6W
R314	401 027 3241	CARBON 560K JA 1/6W
R315	401 025 7845	CARBON 2.2K JA 1/6W
R316	401 025 7845	CARBON 2.2K JA 1/6W
R317	401 026 0647	CARBON 270 JA 1/6W
R318	401 026 0647	CARBON 270 JA 1/6W
R319	401 024 7747	CARBON 100K JA 1/6W
R320	401 024 7747	CARBON 100K JA 1/6W
R321	401 018 3877	CARBON 3.3K JA 1/4W
R322	401 018 3877	CARBON 3.3K JA 1/4W
R323	401 024 7450	CARBON 10K JA 1/6W
R351	401 024 7747	CARBON 100K JA 1/6W
R352	401 025 2345	CARBON 150K JA 1/6W
R353	401 024 7747	CARBON 100K JA 1/6W
R354	401 024 7747	CARBON 100K JA 1/6W
R355	401 024 7747	CARBON 100K JA 1/6W
R356	401 020 2964	CARBON 47K JA 1/4W
R357	401 027 0349	CARBON 47K JA 1/6W
R358	401 012 7069	CARBON 10K JA 1/4W
R359	401 025 2345	CARBON 150K JA 1/6W
R360	401 024 7450	CARBON 10K JA 1/6W
R361	401 027 0349	CARBON 47K JA 1/6W
R362	401 012 7069	CARBON 10K JA 1/4W
R363	401 025 2345	CARBON 150K JA 1/6W
R365	401 012 7069	CARBON 10K JA 1/4W
R401	RF⁄+4121JSFPR	FP-CARBON S 120 OHM J 1/4W R25
R402	401 024 9345	CARBON 1.2K JA 1/6W
R403	401 024 7044	CARBON 1K JA 1/6W
R404	401 012 4563	CARBON 100 JA 1/4W
R405	401 025 7845	CARBON 2.2K JA 1/6W
R406	401 027 2343	CARBON 560 JA 1/6W
R407	401 025 1645	CARBON 1.5K JA 1/6W
R408	401 026 4348	CARBON 3.3K JA 1/6W
R409	401 012 7069	CARBON 10K JA 1/4W
R412	401 020 2964	CARBON 47K JA 1/4W
R413	401 020 2964	CARBON 47K JA 1/4W
R414	401 020 2964	CARBON 47K JA 1/4W
R415	401 027 0349	CARBON 47K JA 1/6W
R416	401 012 8165	CARBON 100K JA 1/4W
R417	401 020 2964	CARBON 47K JA 1/4W
R418	401 020 2964	CARBON 47K JA 1/4W
R419	401 012 8165	CARBON 100K JA 1/4W

PARTS LOCATION

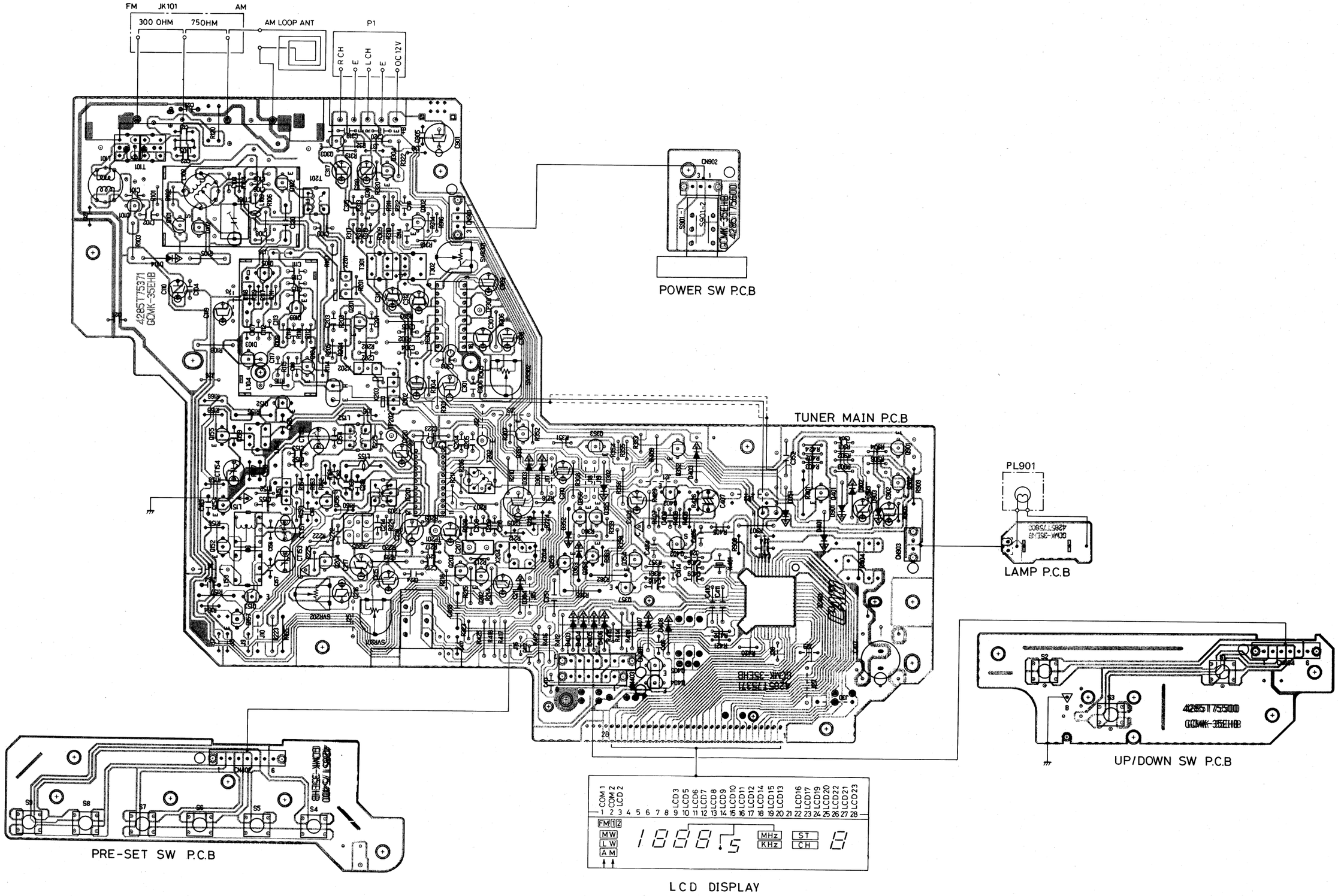


SCHEMATIC DIAGRAM



	K3	K2	K1	K0
KS0	M UP	M DOWN	ST ON/OFF	RECALL
KS1	SEEK UP	SEEK DO	SCAN UP	P SC/A ME
KS2	M1	M2	M3	M4
KS3	M5	M6	VF/AR	BAND
KS4	SK	ST	SD	FOR/REV
KS5	TA/RA	AREA 0	AREA1	AREA2
KS6	ARI	CLOCK	IFO	DSP SEL

WIRING DIAGRAM



PARTS LIST

Ref. No.	Part No.	Description
R420	401 024 7044	CARBON 1K JA 1/6W
R421	401 024 7044	CARBON 1K JA 1/6W
R422	401 024 7044	CARBON 1K JA 1/6W
R424	401 025 1942	CARBON 15K JA 1/6W
R425	401 021 4165	CARBON 56K JA 1/4W
R426	401 025 1645	CARBON 1.5K JA 1/6W
R901	401 024 7747	CARBON 100K JA 1/6W
R902	401 024 6740	CARBON 100 JA 1/6W
R903	401 025 8248	CARBON 22K JA 1/6W
R904	401 024 7747	CARBON 100K JA 1/6W
R905	401 024 6740	CARBON 100 JA 1/6W
R906	401 027 9342	CARBON 820K JA 1/6W
R907	401 020 2073	CARBON 4.7K JA 1/4W
R908	401 026 4348	CARBON 3.3K JA 1/6W
R909	401 020 5905	CARBON 5.6 JB 1/4W

PRE-SET SWITCH PCB ASSY

Ref. No.	Part No.	Description
72	141-4-285T-75400	P.C.BOARD ASSY, PRESET
	BJB2S++3+8+Z1	BIND HD 2 TAPPING SCREW 3X8
S4	4-238T-84673	SWITCH, M1
S5	4-238T-84673	SWITCH, M2
S6	4-238T-84673	SWITCH, M3
S7	4-238T-84673	SWITCH, M4
S8	4-238T-84673	SWITCH, M5
S9	4-238T-84673	SWITCH, M6
CN402	4-240T-83577	SOCKET 7P

UP/DOWN SWITCH PCB ASSY

Ref. No.	Part No.	Description
73	141-4-285T-75500	P.C.BOARD ASSY, UP/DOWN
	BJB2S++3+8+Z1	BIND HD 2 TAPPING SCREW 3X8
S1	4-238T-90173	SWITCH, DOWN
S2	4-238T-90173	SWITCH, UP
S3	4-238T-90173	SWITCH, BAND
CN404	4-240T-83576	SOCKET 6P

POWER SWITCH PCB ASSY

Ref. No.	Part No.	Description
74	141-4-285T-75600	P.C.BOARD ASSY, POWER
	BJB2S++3+8+Z1	BIND HD 2 TAPPING SCREW 3X8

LAMP PCB ASSY

Ref. No.	Part No.	Description
75	141-4-285T-75800	P.C.BOARD ASSY, LAMP
	141-2-329T-09300	REFLECTOR
PL901	4-612T-17400	LAMP

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